State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
RELAY SERVICE FOR THE HEARING IMPAIRED
1-800-253-0191 TDD>Voice
1-800-253-0195 Voice>TDD

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Waste Management Division
103 South Main Street/West Office
Waterbury, Vermont 05671-0404
(802) 241-3877
FAX (802) 241-3296
gerold.noyes@anr.state.vt.us

January 24, 2001

RM VALLEE
RL VALLEE, INC
280 SOUTH MAIN STREET
ST ALBANS, VERMONT 05478

RE: Initial Site Investigation, Quick N'Go III, SMS Site #99-2609
Weathersfield, Vermont

Dear Mr. Vallee:

The Sites Management Section (SMS) has reviewed the January 13, 2001 report titled; *"Site Investigation Report, Quick N'Go III, Route 5, Ascutney, Vermont"* prepared by Twin State Environmental Corporation for work conducted on November 1, 2000 at the above referenced site. After review of this report and the site file, the SMS does not agree with the conclusion of Twin State that no further site investigation is necessary.

Seven soil borings were advanced in an arc in the apparent down gradient direction around the former underground storage tank locations and dispenser island. The borings were advanced to depths from 14 to 20' below ground surface. The soils were described as loose sand and gravel. Field screening of soil samples from these borings did not find elevated volatile organic compound (VOC) levels (above 0.1 parts per million).

The tank removal report (noted VOC levels in excess of 2000 ppm near the tank fill location. Elevated VOC (maximum - 499 ppm under UST #1) levels were also noted at depths of 10 to 12'.

Groundwater was encountered in three of the soil borings between 16.25 and 17'. No groundwater monitor wells were installed. No confirmatory groundwater samples were collected for laboratory analysis.

Given the soil conditions observed, vertical contaminant migration to the groundwater under the USTs is quite possible. Since no confirmatory groundwater samples were collected, the possibility of groundwater contamination cannot be ruled out.

The SMS is therefor requesting that R.L. Vallee determine the degree and extent of contamination, if any, to

over

groundwater. A sufficient number of groundwater monitoring sites should be installed to adequately define the severity of site contamination. Groundwater samples should be analyzed for VOCs using EPA Method 8021B. Please have your consultant submit a preliminary work plan and cost estimate within fifteen days of your receipt of this letter, so it may be approved prior to the initiation of onsite work

If I can be of assistance please feel free to call me at (802) 241-3877.

Sincerely,

Gerold Noyes, P.E.
Environmental Engineer
Sites Management Section

CC: John Abel, owner
Brian Wagner, Twin State Environmental Corp.

D:\MyFiles\site files, active\Quick N Go\Quick N Go-L5.wpd

TWIN STATE
ENVIRONMENTAL
CORPORATION
Environmental Scientists and Engineers

January 15, 2001

Mr. R. M. Vallee
R.L. Vallee, Inc.
280 South Main Street
St. Albans, Vermont

RE: SITE Investigation Report
Quick N' Go III
Ascutney , VT
TSEC Project #99019

Dear Mr. Vallee:

Twin State Environmental Corporation (TSEC) has prepared the enclosed SITE investigation report to detail the findings of recent subsurface investigation activities at the Quick N' Go III facility located in Ascutney, VT(SITE). These activities were performed to assess the degree and extent of the petroleum contamination reported during the April 1999 closure of two (2) 10,000 gallon underground storage tanks and related product dispensing equipment.

During the course of this investigation, a total of seven (7) soil borings were advanced across the SITE in an attempt to characterize the distribution of petroleum related contamination in the soil and groundwater. Groundwater was encountered in three of the borings. Due to the absence of soil contamination at the water table, monitoring wells were not installed.

Petroleum compounds were not detected in soil samples collected for field screening with a photoionization detector (PID). The contamination reported during the UST closure in April 1999 may have resulted from careless handling of UST components by the UST removal contractor. As a result, no further action is warranted.

Please do not hesitate to contact me if you have any questions regarding the enclosed report or any other matters of concern. I can be reached via e-mail at ***brianw@twinstateenvironmental.com***, or at (802) 654-8663 x104.

Sincerely,
TWIN STATE ENVIRONMENTAL CORPORATION

Brian Wagner
Staff Scientist
encl.

cc: Mr. Gerold Noyes, VT SMS
Mr. John Abel, Quick N' Go III

34 Roosevelt Highway
Colchester, Vermont 05446
E-mail: tsec@together.net
Phone: (802) 654-8663
Fax: (802) 654-8667
www.twinstateenvironmental.com

TWIN STATE ENVIRONMENTAL CORPORATION
Environmental Scientists and Engineers

Phase (check one)	Type (check one)
✓ Site Investigation	☐ Work Scope
☐ Corrective Action Feasibility Investigation	✓ Technical Report
☐ Corrective Action Plan	☐ PCF Reimbursement Request
☐ Corrective Action Summary Report	☐ General Correspondence
☐ Operations & Monitoring Report	

SITE INVESTIGATION REPORT
January 13, 2001

Quick N' Go III
Route 5
Ascutney, Vermont

SMS # 99-2609
TSEC Project # 99019

Report Prepared for:
Mr. R.M. Vallee
R.L. Vallee, Inc.
280 South Main Street
St. Albans, Vermont

Written By:
Brian Wagner
Staff Scientist

Reviewed By:
John R. Diego
Project Manager

34 Roosevelt Highway
Colchester, Vermont 05446
E-mail: tsec@together.net
Phone: (802) 654-8663
Fax: (802) 654-8667
www.twinstateenvironmental.com

1.0 INTRODUCTION

This report has been prepared by Twin State Environmental Corporation (TSEC), on behalf of R.L. Vallee, Inc. to present the findings of our recent SITE investigation conducted at the Quick N' Go facility. The SITE is located on Route 5 Ascutney (Weathersfield), Windsor County, Vermont (see SITE Location Map, **Figure 1** and SITE Plan, **Figure 2**).

This investigation was initiated following the completion of TSEC's April 1999 UST Closure Report. In the closure report, TSEC proposed conducting additional subsurface work to investigate the potential impact to the surrounding soils and groundwater. The State of Vermont Sites Management Section (SMS), following their review of the closure report, requested that TSEC provide a work scope and cost estimate (WS/CE) to conduct the subsurface investigation. The SMS approved TSEC's WS/CE in June 1999.

All field investigation activities presented within this report were conducted on November 1, 2000.

2.0 BACKGROUND / PREVIOUS WORK

On April 16 and 17, 1999, two (2) 10,000 gallon gasoline USTs and associated product dispensing equipment were removed from the SITE in compliance with State of Vermont UST Closure requirements. PID readings from soil samples collected during the UST closure assessment showed concentrations of petroleum compounds ranging from <0.1 to >2,000 parts per million volume (ppmv) throughout the UST cavity and product piping lines.

Based on the conditions discovered during the UST closure activities, TSEC recommended conducting a SITE Investigation. During this investigation, seven (7) soil borings were completed using Geoprobe® direct push technology. Soil samples were collected for field screening with a Thermo Environmental Model 580B PID.

3.0 SCOPE OF WORK

The following activities were performed as part of this investigation:

- Preparation of a SITE specific health and safety plan that conforms to OSHA 40 CFR 1910.120.
- Clearance of SITE and vicinity for underground utilities by contacting DIG SAFE (Clearance ID# 200004500518 was obtained).

- Advancement of seven (7) soil borings using Geoprobe® Direct Push technology in the vicinity of the former UST and product dispensing lines. Continuous soil samples were collected, logged, and field screened for the presence of volatile organic compounds (VOCs) using a photoionization detector (PID) equipped with a 10.6 eV lamp.

- If groundwater was encountered, the boring would be completed as a groundwater monitoring well using 1-inch diameter PVC well materials.

- Completion of an updated site plan.

- Completion of a receptor assessment that determined the potential for petroleum contamination to affect nearby building basements, surface water bodies, subsurface utilities, drinking water wells, etc.

- Preparation of this summary report.

4.0 SITE LOCATION AND DESCRIPTION

SITE Owner:	John Abel P.O. Box 252 Ascutney, VT 05452
UST Owner:	R.L. Vallee, Inc. 280 South Main Street St. Albans, VT 05478
SITE Address:	Quick N' Go III Route 5 Ascutney, VT 05452
Lot Size:	
Latitude:	
Longitude:	
Zoning:	Commercial
Utilities:	Water – Municipal Supply Sewer – Municipal Electric - Underground Telephone - Underground
Structures:	One (1) story retail gasoline station with convenience store

The topography of the SITE and immediate vicinity is very flat traveling toward the Connnecticut River (approximately ½ mile to the east). Directly behind the SITE is a steep escarpment leading to a residential area. The nearest potential sensitive receptor identified during this investigation is a private

bedrock water well located approximately 500 feet south of the SITE. The Connecticut River is located approximately ½ mile to the east. Topograpically, groundwater would appear to flow from the west to the east toward the Connecticut River.

5.0 SUBSURFACE INVESTIGATION

A subsurface exploration program was developed to gather data to further assess petroleum-related contamination in the soils and groundwater on SITE. Sample locations were selected based on the results of TSEC's UST Closure Assessment. The pump island and UST locations have been changed since the UST closure assessment was performed in April 1999. The soil boring locations are depicted against the original SITE plan. An updated SITE plan has been overlayed to show the changes.

5.1 Advancement of Soil Borings

A total of seven (7) soil borings were advanced by TSEC on November 1, 2000 in locations indicated on **Figure 2** and as described below, using TSEC's Geoprobe®. Logs for these borings are presented in **Appendix A.** These borings were advanced to depths ranging from 14.0 to 20.0 ft bgs. All borings were logged, describing soil strata conditions, and field screened for VOCs with a PID using conventional headspace techniques (described further in **Section 6 – Field Screening Results**).

BORING SUMMARY TABLE

Boring ID	Boring Location	Depth of Boring/ DTW (in ft bg)
B-1	Advanced between former UST #1 and UST #2 cavity	Boring Depth = 16.5 ft
B-2	Advanced along western edge of former UST cavity	Boring Depth = 16.0 ft
B-5	Advanced outside the northeast corner of the former UST cavity	Boring Depth = 14.0 ft
B-6	Advanced on the southeast corner of the former pump island	Boring Depth = 20.0 ft
B-8	Advanced on the northeast side of the former pump island	Boring Depth = 16.0 ft
B-9	Advanced within the former pump island area	Boring Depth = 20.0 ft

Proposed borings B-3, B-4, and B-7 were not advanced due to the field screening results from surrounding borings and/or concerns about underground utilities.

General soil conditions encountered at the SITE consisted of asphalt/fill material from 0-0.5 foot bgs and mixed sands throughout the remainder of the borings. Groundwater was encountered in borings B-6, B-7, and B-9 at depths ranging from 16.25 to 17.0 feet bgs. PID readings from samples collected in each boring were <0.1 parts per million volume (ppmv). Monitoring wells were not installed in the borings due to a lack of detectable petroleum contamination in the soil samples at the water table interface.

Further description of subsurface materials and contaminant distribution can be found in **Appendix A, Boring Logs**. A complete summary of all PID data obtained during drilling is presented in **Table 1**, Soil Sample Summary – PID Data.

5.2 SITE Survey

A Topcon AT-G6 auto level was used to perform a stadia survey to identify the location of soil borings and other pertinent SITE features (the new pump island and UST) The collected data was used to update the SITE Plan (**Figure 2**).

6.0 SOIL SAMPLING ACTIVITIES

6.1 Field Screening Results

Soil samples were field screened using conventional headspace methods. A Thermo Environmental Instruments Model 580B Organic Vapor Meter with a 10.6 eV photoionization detector (PID) was employed to detect the presence of VOCs. The PID was calibrated to a 95 ppmv isobutylene standard, referenced to benzene.

Data collected during the field screening did not indicate detectable levels of VOCs (>0.1 ppmv) in any soil sample. No samples were collected for fixed based laboratory analysis.

7.0 RECEPTOR EVALUATION

During field activities conducted for TSEC's UST Closure Report (dated April 1999), sensitive receptors in the SITE vicinity were identified and assessed for the likelihood of impact by petroleum contamination. These included surface water receptors, groundwater supply wells, downgradient basements, breathing zones of the SITE building, and subsurface utility corridors from the on-SITE contamination. The pertinent findings of the evaluation are presented below:

Receptor	Findings
Surface Water Receptors	Surface water features identified within a ½-mile radius of the SITE include the Connecticut River located approximately ½ mile east of the SITE.
Human Receptors	A review of State of Vermont Water Supply records show eleven (11) private water supply wells within a ½ mile radius of the SITE. The nearest well is located approximately 500' south and slightly upgradient of the SITE.

Data Source: *TSEC's April 1999 "UST Closure Report"*

8.0 CONCLUSIONS

Based on the investigation conducted at this SITE, and the data obtained, TSEC provides the following conclusions regarding this SITE:

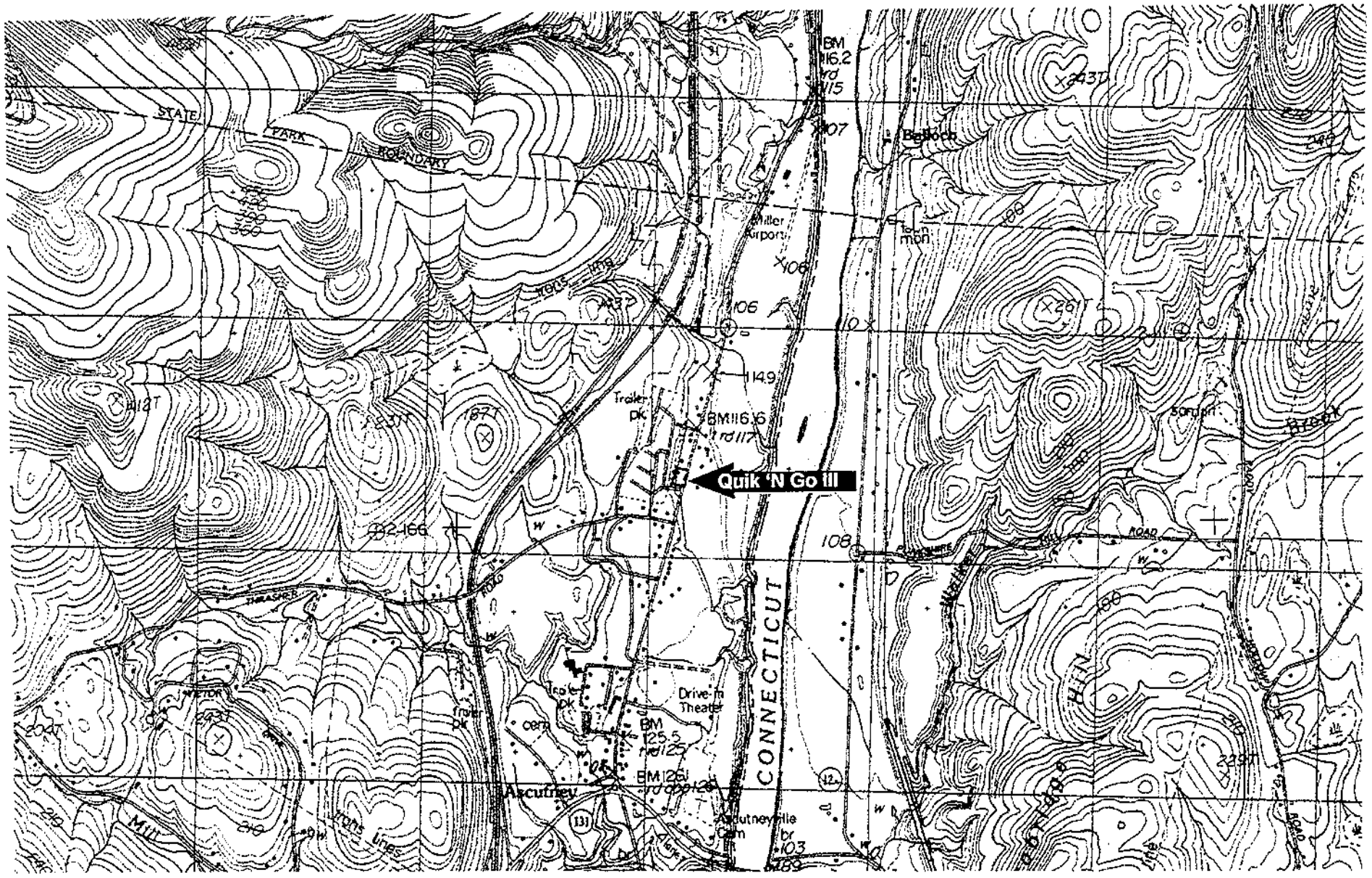
- TSEC completed a subsurface investigation program on November 1, 2000 that included the advancement of seven (7) soil borings.
- PID readings in soils were less than 0.1 ppmv.
- Groundwater was encountered in B-6, B-7, and B-9 between 16.2 and 17.0 feet bgs.
- Based on field screening and visual data, there does not appear to be any petroleum contamination at this SITE relating to the UST closure performed in April 1999.

9.0 RECOMMENDATIONS

Based on the information available to date concerning this SITE and vicinity, TSEC submits that no additional environmental investigation is necessary related to the UST closure. TSEC recommends that the SITE be considered for a Sites Management Activities Closure (SMAC) designation.

G:\99019qng\1100 Sl rpt.doc

FIGURES

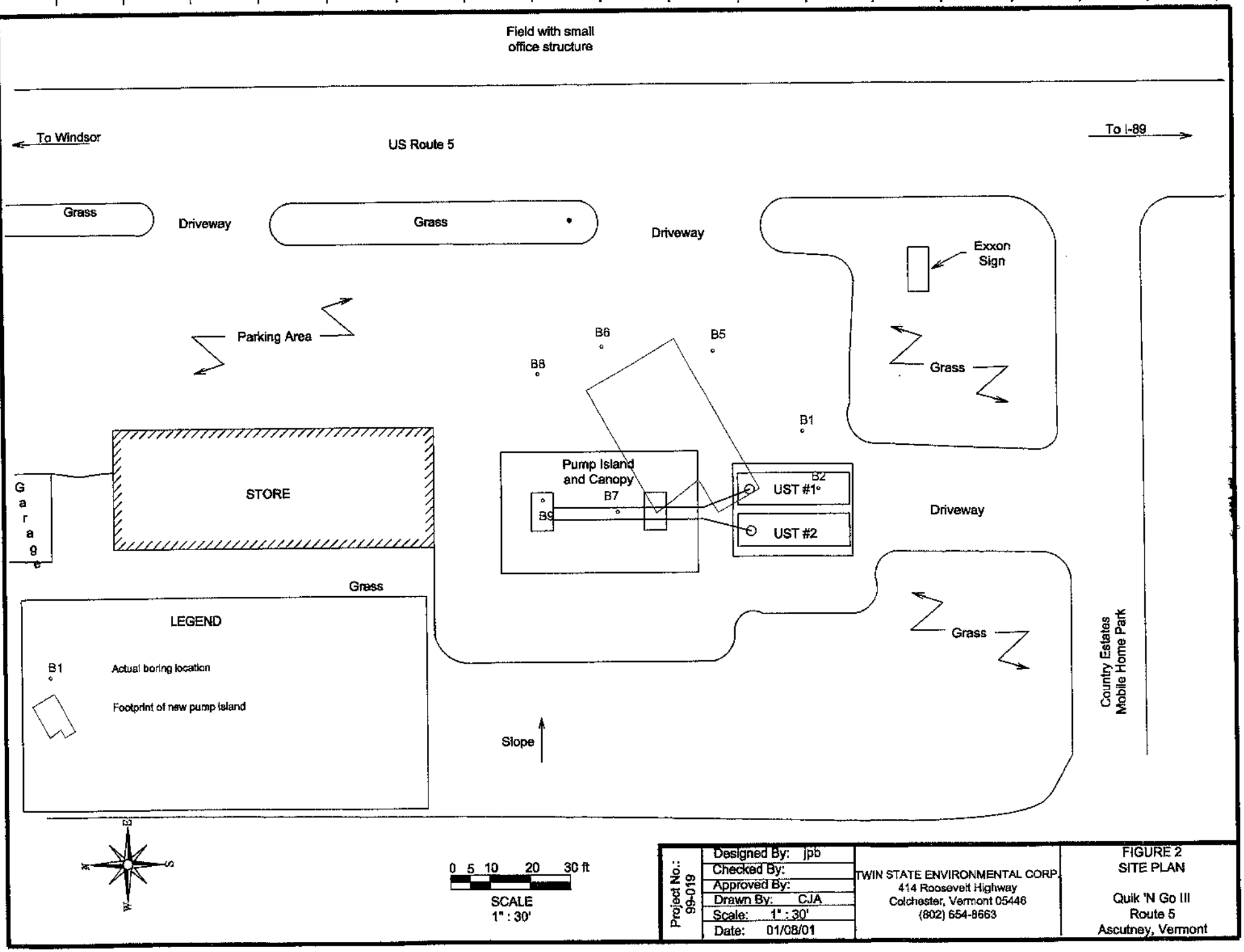


N
W E
S

Source: USGS 7.5 Minute Topographic Map Series
Mt. Ascutney, Vermont Quadrangle

0 2000
Scale (in feet) 1"=2,000'

Project No: 99-019	Designed By: jpb Checked By: Approved By: Drawn By: jpb Scale: as shown Date: 04/19/99	TWIN STATE ENVIRONMENTAL CORP. 34 Roosevelt Highway Colchester, Vermont (802) 654-8663	FIGURE 1 SITE LOCATION MAP Quik 'N Go III Route 5 Ascutney, Vermont


Field with small
office structure
To Windsor
US Route 5
To I-89
Grass
Driveway
Grass
Driveway
Exxon
Sign
Parking Area
B6
B5
B8
Grass
B1
Pump Island
and Canopy
B7
B2
UST #1
B9
UST #2
Driveway
STORE
Garage
Grass
Grass
LEGEND
B1
Actual boring location
Footprint of new pump island
Slope
Country Estates
Mobile Home Park
N
W
S
0 5 10 20 30 ft
SCALE
1" : 30'
Project No.:
99-019
Designed By: jpb
Checked By:
Approved By:
Drawn By: CJA
Scale: 1" : 30'
Date: 01/08/01
TWIN STATE ENVIRONMENTAL CORP.
414 Roosevelt Highway
Colchester, Vermont 05446
(802) 654-8663
FIGURE 2
SITE PLAN
Quik 'N Go III
Route 5
Ascutney, Vermont

TABLE

TABLE 1

Quick N' Go III
Ascutney Vermont
SMS SITE # 99-2609

Soil Sample Summary - PID Data

November 1, 2000

Boring Identification	Depth of Sample (ft bgs)	PID Reading (in ppmv)
B-1	0-4	<0.1
	4-8	<0.1
	8-12	<0.1
	12-16	<0.1
	16-20	<0.1
B-2	0-4	<0.1
	4-8	<0.1
	8-12	<0.1
	12-16	<0.1
B-5	0-4	<0.1
	4-8	<0.1
	8-12	<0.1
	12-16	<0.1
B-6	0-4	<0.1
	4-8	<0.1
	8-12	<0.1
	12-16	<0.1
	16-20	<0.1

Boring Identification	Depth of Sample (ft bgs)	PID Reading (in ppmv)
B-7	0-4	<0.1
	4-8	<0.1
	8-12	<0.1
	12-16	<0.1
B-8	0-4	<0.1
	4-8	<0.1
	8-12	<0.1
	12-16	<0.1
B-9	0-4	<0.1
	4-8	<0.1
	8-12	<0.1
	12-16	<0.1

Notes:

1. *PID readings were obtained with a Thermo-Environmental Instruments Model 580B PID calibrated to a 95 ppmv isobutylene standard referenced to benzene.*
2. *Conventional headspace techniques were used.*

APPENDIX A

TWIN STATE ENVIRONMENTAL
414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

MONITORING WELL/SOIL BORING LOG

Project Name: **Quick N' Go III**
Location: **Ascutney, Vermont**
TSEC Project #: **99019**

WELL/ BORING ID: **B-1**

INSTALL DATE:	11/01/00	WELL DEPTH: NA	BORING DEPTH: 16.5 ft
TSEC REP:	JRD	DEPTH TO WATER: (during drilling)	>16.5 feet
DRILLING CO:	TSEC	SCREEN DIA: NA	DEPTH: NA
		SCREEN TYPE/SIZE: NA	
DRILLING METHOD:	Geoprobe	RISER TYPE: NA	
SAMPLING METHOD:	Continuous	RISER DIA.: NA	DEPTH: NA
REFERENCE POINT (RP):	Grade	GUARD TYPE: NA	
ELEVATION OF RP:	Not Measured	RISER CAP: NA	
REMARKS:	Boring was backfilled with bentonite, native soils, clean sand, and finished to match the existing grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N				
1	O				
2					0-0.25' - Asphalt
3	W				2'-3.2' - Brown, SAND, m, trace gravel, loose, dry
4	E	0-4'	<0.1	58%	3.2'-4' - Brown, SAND, f, very loose, dry
5	L				
6	L				
7					
8	I	4-8'	<0.1	42%	4'-8' - Pushed stone from 4-7.2'. AA
9	N				
10	S				
11	T				8'-11' - Brown, SAND, f, large stones (limestone), dry
12	A	8-12'	<0.1	58%	11'-12' - Brown, SAND, m, trace round stones, very loose, dry
13	L				
14	L				
15	E				12'-14' - Brown, SAND, f, very loose, dry
16	D	12-16'	<0.1	83%	15'-16' - Brown, SAND, f/m, very loose, dry
17					
18					
19					
20		16-16.5'	<0.1	0%	Pushed stone to refusal at 16.5'
21					Bedrock Refusal at 16.5'
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

TWIN STATE ENVIRONMENTAL
414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

MONITORING WELL/SOIL BORING LOG

Project Name: **Quick N' Go III**
Location: **Ascutney, Vermont**
TSEC Project #: **99019**

WELL/ BORING ID: **B-2**

INSTALL DATE:	11/01/00	WELL DEPTH: NA	BORING DEPTH: 16.0 ft
TSEC REP:	JRD	DEPTH TO WATER: (during drilling)	>16.0 feet
DRILLING CO:	TSEC	SCREEN DIA: NA	DEPTH: NA
		SCREEN TYPE/SIZE: NA	
DRILLING METHOD:	Geoprobe	RISER TYPE: NA	
SAMPLING METHOD:	Continuous	RISER DIA.: NA	DEPTH: NA
REFERENCE POINT (RP):	Grade	GUARD TYPE: NA	
ELEVATION OF RP:	Not Measured	RISER CAP: NA	
REMARKS:	Boring was backfilled with bentonite, native soils, clean sand, and finished to match the existing grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N				
1	O				
2					0-0.25' - Asphalt
3	W				0.25'-3' - Brown, SAND, m, trace gravel, loose, dry
4	E	0-4'	<0.1	50%	3.2'-4' - Brown, SAND, f/m, loose, dry
5	L				
6	L				
7					
8	I	4-8'	<0.1	50%	4'-8' - Brown, SAND, f/m, loose, dry
9	N				
10	S				
11	T				
12	A	8-12'	<0.1	67%	8'-12' - Brown, SAND, f/m, loose, dry
13	L				
14	L				
15	E				
16	D	12-16'	<0.1	83%	12'-16' - Brown, SAND, f/m, loose, dry
17					
18					
19					
20					
21					Bedrock Refusal at 16.0'
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V.LOOSE	<2	V.SOFT
4-10	LOOSE	2-4	SOFT
10-30	M.DENSE	4-8	M.STIFF
30-50	DENSE	8-15	STIFF
>50	V.DENSE	15-30	V.STIFF
		>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

TWIN STATE ENVIRONMENTAL
414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

MONITORING WELL/SOIL BORING LOG

Project Name: **Quick N' Go III**
Location: **Ascutney, Vermont**
TSEC Project #: **99019**

WELL/ BORING ID: **B-5**

INSTALL DATE:	11/01/00	WELL DEPTH: NA	BORING DEPTH: 14.0 ft
TSEC REP:	JRD	DEPTH TO WATER: (during drilling)	>14.0 feet
DRILLING CO:	TSEC	SCREEN DIA: NA	DEPTH: NA
		SCREEN TYPE/SIZE: NA	
DRILLING METHOD:	Geoprobe	RISER TYPE: NA	
SAMPLING METHOD:	Continuous	RISER DIA.: NA	DEPTH: NA
REFERENCE POINT (RP):	Grade	GUARD TYPE: NA	
ELEVATION OF RP:	Not Measured	RISER CAP: NA	
REMARKS:	Boring was backfilled with bentonite, native soils, clean sand, and finished to match the existing grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N				
1	O				
2					
3	W				0-0.25' - Asphalt
4	E	0-4'	<0.1	81%	2'-4' - Brown, SAND, f, trace silt, loose, dry
5	L				
6	L				
7					4'-6.6' - AA
8	I	4-8'	<0.1	90%	6.6'-8' - Brown, SAND, m, very loose, dry
9	N				
10	S				
11	T				8'-11' - AA
12	A	8-12'	<0.1	83%	11'-12' - Brown, SAND, m, trace gravel, loose, dry
13	L				
14	L				
15	E				12'-15' - Brown, SAND, f/m, very loose, damp
16	D	12-16'	<0.1	71%	15'-16' - Brown, SAND, f, trace silt, schist
17					
18					
19					
20					
21					Bedrock Refusal at 16.0'
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

TWIN STATE ENVIRONMENTAL
414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

MONITORING WELL/SOIL BORING LOG

Project Name: **Quick N' Go III**
Location: **Ascutney, Vermont**
TSEC Project #: **99019**

WELL/ BORING ID: **B-6**

INSTALL DATE:	11/01/00	WELL DEPTH: NA	BORING DEPTH: 17.5 ft
TSEC REP:	JRD	DEPTH TO WATER: (during drilling)	17.0 feet
DRILLING CO:	TSEC	SCREEN DIA: NA	DEPTH: NA
		SCREEN TYPE/SIZE: NA	
DRILLING METHOD:	Geoprobe	RISER TYPE: NA	
SAMPLING METHOD:	Continuous	RISER DIA.: NA	DEPTH: NA
REFERENCE POINT (RP):	Grade	GUARD TYPE: NA	
ELEVATION OF RP:	Not Measured	RISER CAP: NA	
REMARKS:	Boring was backfilled with bentonite, native soils, clean sand, and finished to match the existing grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N				
1	O				
2					0-0.25' - Asphalt
3	W				0.25-2.5' - Green, SAND, f/m, loose, dry
4	E	0-4'	<0.1	83%	2.5'-4' - Brown, SAND, f, trace silt and peat, loose, dry
5	L				
6	L				
7					4'-6.5' - Brown, SAND, f, trace silt, loose, damp
8	I	4-8'	<0.1	88%	6.5'-8' - Brown, SAND, m, very loose, dry
9	N				
10	S				
11	T				
12	A	8-12'	<0.1	83%	8'-12' - Brown, SAND, m, very loose, dry
13	L				
14	L				
15	E				12'-14' - Brown, SAND, m, very loose, dry
16	D	12-16'	<0.1	71%	14'-16' - Brown, SAND, f, loose, dry
17					
18					16'-16.25' - AA
19					16.25'-16.9' - Brown, SAND, m/c, with stones, trace silt, loose, wet
20		16-17.5'	<0.1	44%	16.9'-17.5' - Green, Schist, w/quartzite
21					Bedrock Refusal at 17.5'
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS		COHESIVE SOILS	
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY
0-4	V.LOOSE	<2	V.SOFT
4-10	LOOSE	2-4	SOFT
10-30	M.DENSE	4-8	M.STIFF
30-50	DENSE	8-15	STIFF
>50	V.DENSE	15-30	V.STIFF
		>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

TWIN STATE ENVIRONMENTAL
414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

MONITORING WELL/SOIL BORING LOG

Project Name: **Quick N' Go III**
Location: **Ascutney, Vermont**
TSEC Project #: **99019**

WELL/ BORING ID: **B-7**

INSTALL DATE:	11/01/00	WELL DEPTH: NA	BORING DEPTH: 20.0 ft
TSEC REP:	JRD	DEPTH TO WATER: (during drilling)	17.0 feet
DRILLING CO:	TSEC	SCREEN DIA: NA	DEPTH: NA
		SCREEN TYPE/SIZE: NA	
DRILLING METHOD:	Geoprobe	RISER TYPE: NA	
SAMPLING METHOD:	Continuous	RISER DIA.: NA	DEPTH: NA
REFERENCE POINT (RP):	Grade	GUARD TYPE: NA	
ELEVATION OF RP:	Not Measured	RISER CAP: NA	
REMARKS:	Boring was backfilled with bentonite, native soils, clean sand, and finished to match the existing grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N				
1	O				
2					0-0.25' - Asphalt
3	W				0.25'-2.3' - Brown, SAND, f/m, trace gravel, loose, dry
4	E	0-4'	<0.1	81%	2.3'-4' - Brown, SAND, f, loose, dry
5	L				
6	L				
7					
8	I	4-8'	<0.1	67%	4'-8' - Brown, SAND, f/m, loose, trace gravel, loose, dry
9	N				
10	S				
11	T				
12	A	8-12'	<0.1	67%	8'-12' - Brown, SAND, f/m, loose, dry
13	L				
14	L				
15	E				
16	D	12-16'	<0.1	75%	12'-16' - Brown, SAND, f/m, loose, dry
17					
18					
19					16'-17' - Brown, SAND, f/m, loose, dry
20		16-20'	<0.1	100%	17'-20' - Brown, SAND, f/m, loose, saturated
21					
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

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414 Roosevelt Highway Colchester, Vermont 05446
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MONITORING WELL/SOIL BORING LOG

Project Name: **Quick N' Go III**
Location: **Ascutney, Vermont**
TSEC Project #: **99019**

WELL/ BORING ID: **B-8**

INSTALL DATE:	11/01/00	WELL DEPTH: NA	BORING DEPTH: 16.0 ft
TSEC REP:	JRD	DEPTH TO WATER: (during drilling)	>16.0 feet
DRILLING CO:	TSEC	SCREEN DIA: NA	DEPTH: NA
		SCREEN TYPE/SIZE: NA	
DRILLING METHOD:	Geoprobe	RISER TYPE: NA	
SAMPLING METHOD:	Continuous	RISER DIA.: NA	DEPTH: NA
REFERENCE POINT (RP):	Grade	GUARD TYPE: NA	
ELEVATION OF RP:	Not Measured	RISER CAP: NA	
REMARKS:	Boring was backfilled with bentonite, native soils, clean sand, and finished to match the existing grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N				
1	O				0-0.25' - Asphalt
2					0.25-2' - Brown, SAND, c, trace gravel loose, dry
3	W				2'-4' - Brown, SAND, f, trace silt, loose, dry
4	E	0-4'	<0.1	75%	
5	L				
6	L				4'-6.6' - Brown, SAND, f, trace silt, loose, dry
7					6.6'-8' - Brown, SAND, f/m, very loose, dry
8	I	4-8'	<0.1	90%	
9	N				
10	S				
11	T				8'-11.3' - Brown, SAND, m, very loose, dry
12	A	8-12'	<0.1	79%	11.3'-12' - Brown, SAND, f, trace silt, loose, dry
13	L				
14	L				
15	E				12'-15.9' - AA
16	D	12-16'	<0.1	54%	15.9'-16' - Black, SCHIST, highly oxidized
17					
18					
19					
20					
21					Bedrock Refusal at 16.0'
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

TWIN STATE ENVIRONMENTAL
414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

MONITORING WELL/SOIL BORING LOG

Project Name: **Quick N' Go III**
Location: **Ascutney, Vermont**
TSEC Project #: **99019**

WELL/ BORING ID: **B-9**

INSTALL DATE:	11/01/00	WELL DEPTH: NA	BORING DEPTH: 20.0 ft
TSEC REP:	JRD	DEPTH TO WATER: (during drilling)	17.0 feet
DRILLING CO:	TSEC	SCREEN DIA: NA	DEPTH: NA
		SCREEN TYPE/SIZE: NA	
DRILLING METHOD:	Geoprobe	RISER TYPE: NA	
SAMPLING METHOD:	Continuous	RISER DIA.: NA	DEPTH: NA
REFERENCE POINT (RP):	Grade	GUARD TYPE: NA	
ELEVATION OF RP:	Not Measured	RISER CAP: NA	
REMARKS:	Boring was backfilled with bentonite, native soils, clean sand, and finished to match the existing grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N				
1	O				
2					0-0.25' - Asphalt
3	W				0.25-4' - Brown, SAND, f/m, trace silt, loose, dry
4	E	0-4'	<0.1	54%	
5	L				
6	L				
7					4'-6.5' - AA
8	I	4-8'	<0.1	90%	6.5'-8' - Brown, SAND, m, very loose, dry
9	N				
10	S				
11	T				
12	A	8-12'	<0.1	79%	8'-12' - AA
13	L				
14	L				
15	E				12'-14' - Brown, SAND, f/m, very loose, dry
16	D	12-16'	<0.1	92%	14'-16' - Brown, SAND, f, loose, damp
17					
18					16'-16.8' - Brown, SAND, f, loose, damp
19					16.8'-17.5' - Brown, SAND, m/c, with stones, very loose, wet
20		16-20'	<0.1	96%	17.5'-20' - Brown, SAND, f, loose, wet
21					
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

TWIN STATE ENVIRONMENTAL CORP.
P.O. Box 719
1A Huntington Road
RICHMOND, VERMONT 05477-0719

(802) 434-3350
FAX (802) 434-4478

LETTER OF TRANSMITTAL

DATE	JOB NO.
1.17.01	99019

ATTENTION: John Abel

RE: Quick N' Go III

TO Route 5
Ascutney, Vermont 05030

WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1	1.13.01		Site Investigation

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

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☐ For review and comment ☐ _____

☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

Jim Driver - R.L. Vallee w/o encl.

COPY TO Gerald Noyes - VT-SMS

SIGNED: Ann Doherty

If enclosures are not as noted, kindly notify us at once.